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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,489	07/31/2001	Manuel Garcia Portillo	2609-1-001	1718

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THEISEN, DOUGLAS J

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

1724

DATE MAILED: 02/20/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/890,489	PORTILLO ET AL.
<b>Examiner</b>		
Douglas J. Theisen	Art Unit	1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  - Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1)  Responsive to communication(s) filed on 10 May 2002.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4)  Claim(s) 1 to 6 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1 to 6 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 31 July 2001 is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner

Priority under 35 U.S.C. §§ 119 and 120

- 13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)      4)  Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)      5)  Notice of Informal Patent Application (PTO-152)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5      6)  Other: \_\_\_\_\_

## DETAILED ACTION

## Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 - 6 are rejected under 35 USC 112, 1st paragraph, because the application as originally filed fails to provide an adequate written description of the claimed invention.

Claim 1 requires that the automatic control means provide that the mixed clarified water be retained in "each" carbon column for at least two hours. The specification as originally filed on 02/03/2000 does not support, i.e., describe, this feature. Rather, page 11 at line 14 describes automatic control means for providing that the mixed clarified water be retained in "the [three carbon column] bottles 9" for at least two hours. The skilled artisan would have understood this to have meant that pumping ceases for at least two hours. Thereafter, pumping resumes to displace all liquid in the array from which toxic chemicals had been adsorbed by the carbon and replaced with mixed clarified water. The skilled artisan would not have understood from applicants' original disclosure that they were in possession of automatic control means for pumping mixed clarified water into the carbon columns only for so long as necessary to move the liquid from the

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first and second columns into the second and third columns, respectively, and for preventing pumping again for at least two hours. Claims 2 - 6 are rejected for the reasons given with respect to claim 1.

Furthermore, the application as originally filed does not describe tank 7 as comprising a stirrer.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 - 6 are rejected under 35 USC Sec.112, second paragraph, for failing to particularly point out and distinctly claim the subject matter for which a patent is sought.

It is unclear whether each recited element which is immediately followed by one or more parenthetical numerals, e.g., "filter tank (1,15)," is generic, e.g., "filter tank," or whether it is limited to the specific features described in the specification that are shared by all such enumerated embodiments, e.g., filter tank 1 and filter tank 15. For example, it is unclear if "stirrer (3)" is generic to any stirrer, it is unclear what relation exists, if any, between pump 11 and the "pumping means" recited in claim 1.

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Per claim 5, a "purification" what? Was a "purification system" contemplated? Further, it is unclear what difference, if any, exists between the "activated carbon" of claim 4 and the active carbon of claim 1.

Per claim 6, the nomenclature of "columns 9" and "bottle 9" is inconsistent. It is suggested that at line 4, "a fourth bottle (9)" be changed to "a fourth column." Further, it is unclear whether and in what specific manner the last 30 words of the claim - beginning with "in reserve" - limit the scope of system claim 6.

Claims 1 - 6 are objected to for minor informalities: In claim 1, line 3, there must be a colon (":") after "comprising." In claim 6, at lines 2 - 3, "in that the array . . . are mounted" should be corrected to read, "in that the array . . . is mounted."

#### Allowable Subject Matter

Claim 1 - 6 would be allowable over the prior art of record if amended to overcome all outstanding Sec.112, issues raised in this action.

#### Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USP 4663047 is cited of interest as an English language equivalent of EP 0 176 912 cited by applicants.

USP 4507208 to Simon is cited of interest, but the recited array of three carbon columns do not read on the activated carbon filter cakes which build up with time on the individual filter leaves 104. Further, provision of the recited automatic control means is not suggested in combination with this reference.

USP 5061367 to Hatch and USP 3658697 to Huether are cited for the recognition that contact time between a contaminated liquid and an activated carbon bed is a known result-effective variable, but neither reference describes the recited automatic control means. USP 3658697 to Huether describes a wastewater purification process in which “[a]ny number of carbon adsorbers may be used and connected . . . in series” (col 2 line 64). The reference also acknowledges that “contact time” is a known result effective variable. The application does not appear to describe any unexpected benefits flowing from use of three beds having a residence time of “two hours.”

USP 6001246 to Suenkonis is cited of interest for its disclosure of inclined plate filter tanks 14 to which flocculent is added, sand filters 15, 16, holding tank 17, pumps 18, 25 micron filters, and two carbon beds in series. Suenkonis does not describe a stirrer in holding tank 17, a third carbon bed in series, or the recited automatic control means. The “automatic control means” claim element is drafted in “means-plus-function” format of §112, sixth paragraph. Accordingly, Suenkonis does not describe the “automatic control means” element recited in claim 1 because the reference does not describe:

[A] litre counter with an electronic output connected to an electrical automatism that prevents the pump from continuing to drive the liquid until the liquid that is inside the [activated carbon columns] has remained there for at least two hours

(specification, page 11 lines 11 - 15), or §112, sixth paragraph, equivalents thereof. It should be noted that the specification does not describe a variable speed pump, or a flow control valve, which controls the liquid flow rate to the point that the residence time of the fluid in the columns is two hours. Rather, the specification describes a process control strategy in which the automatic process controller prevents the pump from "continuing to drive" the liquid. In other words, the skilled artisan would have understood the recited "automatic control means" to function as follows: Cease pumping once a volume of liquid equal to the void volume of the carbon columns had been admitted to the columns, wait at least two hours, and then resume pumping for as long as necessary to pump an additional volume of liquid equal to the void volume of the carbon columns, measured by a volume counting device, and repeat.

Suenkonis describes a nominal "25-micron" bag filter downstream of the pump. Accordingly, the skilled artisan would have understood Suenkonis's clarified effluent stream in settling tank 17 to include more than an insubstantial amount of solid particles larger than about 25 microns

USP 5692461 to Crovato teaches that particles over 25 microns settle in undisturbed tanks and can plug downstream pumps. USP 5692461 to Crovato, directed to the analogous art of removing solid particulates from liquids, teaches that solid particulates 25 microns or larger could clog or plug a pump, especially

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if the particles agglomerate (Crovato column 16). Crovato's teaching is broadly applicable to a wide variety of commonly-used pumps, e.g., centrifugal pumps, and is not particular to any specific type of pump limited to automotive engine coolant pumping type pumps. Crovato describes overcoming this potential problem of pump plugging or clogging by filtering the process stream before feeding it to the pump inlet (Crovato Fig 23, filter 82 upstream of pump 78). In other embodiments, e.g., Fig. 21, Crovato provides the filter 82 downstream of the pump.

USP 5227528 to Webster is cited for the teaching that any number of carbon bed adsorption columns can be used in series while operated in batch mode or continuous mode. Also, for the teaching of carbon bed / liquid contact time in the range of 0.5-8 hr. USP 5227528 to Webster describes that carbon bed adsorption processes can be with continuous or batch (col 3 line 20). Webster also describes using more than two carbon beds where two would suffice (see Webster's claim 4). Moreover, that contact time between the liquid and the carbon bed preferably lie in the range of from about 0.5 - 8 hours.

USP 4824577 to Schwitzgebel, USP 6319414 to Wiseburgh, and USP 4692250 to Miller are cited of interest. USP 4824577 to Schwitzgelbel describes using three activated carbon columns arranged in series to purify water of organic contaminants. Specifically, the reference describes:

An advantageous carbon bed arrangement is to have three carbon beds in series with piping so that the feed may start at either end. Thus when leakage of phenol from the terminal bed starts the flow may be stopped and the beginning carbon bed, which will be fully loaded with phenol, may

be replaced. The feed may then be changed so that the newly installed carbon bed becomes the terminal or clean-up bed.

None of 5227528 to Webster, USP 4824577 to Schwitzgebel, USP 6319414 to Wiseburgh, and USP 4692250 to Miller describes the recited automatic process control means, or suggests the same in combination with the other recited elements of claim 1. USP 4692250 to Miller, directed to applicants' field of wastewater treatment, teaches that mixing means, such as a stirrer (not shown in figure), can be provided in holding tanks (16) to prevent settling of residual particulates prior to pumping.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas J. Theisen whose telephone number is 703-305-6499. The examiner can normally be reached on Monday, Tuesday, and Wednesday 6:30 until 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons can be reached on 703-308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

February 5, 2002 ~~2003~~

*Douglas J. Theisen*

*Chestert B*  
CHESTER T. BARRY  
PRIMARY EXAMINER  
*2/6/03*